Table 4. Summary of Statistical Parameters from Bivariate Analysis –

Inside Lane of I-40 (Eastbound Direction) in Durham County

Parameters	Crashes Vs. Macrotexture						LN of Crashes Vs. Macrotexture					
	All	Dry	Wet	Fatal	Injury	PDO	All	Dry	Wet	Fatal	Injury	PDO
Constant	71.970	54.361	13.828	0.325	15.702	54.500	5.138	4.836	2.524	0.080	3.093	4.779
Coefficient	-310.8	-233.2	-62.0	-1.6	-66.4	-236.6	-17.9	-17.4	-11.0	-0.4	-12.7	-17.6
T-Statistic	-3.66	-3.80	-2.92	-1.32	-3.72	-3.49	-6.71	-6.53	-4.13	-1.05	-4.93	-6.14
P-Value	0.001	0.001	0.007	0.197	0.001	0.002	0.000	0.000	0.000	0.301	0.000	0.000
R^2	30.90	32.50	22.10	5.50	31.60	28.90	60.00	58.70	36.30	3.60	44.70	55.70
R^2 (Adj.)	28.60	30.30	19.50	2.30	29.30	26.50	58.70	57.30	34.10	0.30	42.90	54.20
PRESS Value	26112	13647	1625	5	1141	16735	25	25	26	1	23	30
F-Statistic	13.42	14.46	8.50	1.74	13.83	12.19	44.98	42.59	17.07	1.11	24.27	37.71

Likewise, Figure 15(b) shows the scatter plot between logarithm of crashes (y-axis) and pavement macrotexture (x-axis) for the same corridor in Figure 15(a). It can also be seen from Figure 15(b) that the logarithm of crashes decreases as pavement macrotexture increases.

Statistical parameters from linear regression analysis (Table 5) indicate that there is a statistically significant relationship between 1) crashes and pavement macrotexture and 2) logarithm of crashes and pavement macrotexture for this corridor. Similar results were observed when analyzed considering dry crashes, wet crashes, injury crashes and PDO crashes. As there are no fatal crashes on this corridor in westbound direction, no results were obtained in case of fatal crashes. The coefficient for pavement macrotexture is negative indicating that the number of crashes decreases as pavement macrotexture increases. T-Statistic is greater than 2 and P-Value is less than 0.05 (95 percent confidence level) for all the crash types except for fatal crashes and in case of relation between logarithm of wet crashes and pavement macrotexture. The difference between R^2 and R^2 (Adjusted) is low indicating a good fit. F-Statistic is greater than 4 in all cases except for fatal crashes and logarithm of wet crashes and pavement macrotexture. A comparison of T-Statistic and P-Value for pavement macrotexture, R^2, PRESS and F-Statistic for crashes and logarithm of crashes, shows that, a stronger and better relationship exists between logarithm of crashes and pavement macrotexture than when compared to crashes.